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AUTHOR Calvert, Sandra; Watkins, Bruce
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ABSTRACT

This study investigated developmental changes in children's recall of televised central and incidental content. Central content was plot-relevant; incidental content was peripheral to the plot. Both content types were classified at two levels of production features, high salience and low salience. High salience features were high action, loud music or singing, and special effects. Low salience features were character dialogue and low action. Comprehension questions were generated to fit each of these four cells. One hundred and sixty children at two age levels, kindergarten and third-fourth grade viewed a prosocial cartoon in same-sex pairs. Children then participated in an immediate multiple choice test and returned 45 minutes later for a delayed test. Results indicated that older children are more selective in recall of central over incidental material than are younger children. Findings also showed that pairing content with highly salient production features improved central recall at both age levels, particularly for younger children. (Author/RH)

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Recall of Television Content as a Function of Content Type and Level of Production Feature Use

Sandra Calvert and Bruce Watkins

Center for
Research on the
Influences of
Television on
Children

Department of Human Development

University of Kansas

Lawrence, Kansas 66045

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RECALL OF TELEVISION CONTENT AS A FUNCTION OF CONTENT TYPE AND LEVEL OF PRODUCTION FEATURE USE.

Sandra Calvert and Bruce Watkins, University of Kansas

The present experiment investigated developmental changes in children's recall of televised central and incidental content. Central content was plot-relevant; incidental content was peripheral to the plot. Both content types were classified at two levels of production features, high salience and low salience. High salience features were high action, loud music or singing, and special effects. Low salience features were character dialogue and low action. Comprehension questions were generated to fit each of these four cells.

One hundred and sixty children at two age levels, kindergarten and third-fourth grade, viewed a prosocial cartoon in same-sex pairs. Children then particapated in an immediate multiple choice test and returned 45 minutes later for a delayed test.

Results supported previous findings that older children are more selective in recall of central over incidental material than are younger children. This age difference in selective recall was due almost entirely to the delay. Older children retained central information over time and lost little incidental information. Younger children, however, recalled less central and increased slightly in recall of incidental information over time.

Pairing content with highly salient production features improved central recall at both age levels, particularly for younger children. Though the younger children had difficulty recalling central information presented with low salience features, the effect of a highly salient presentation was to help them remember central information as well as incidental information. Moreover, older children still used these salient features to help encode and store central information. Producers of children's television programs might use high salience features selectively to facilitate young children's recall of central, thematic content.

Television messages are conveyed through both content and form. The content of televised material may be central, theme-relevant information, or the content may be incidental, peripheral information. Both central and incidental information are conveyed through formal features, that is, the visual and auditory production techniques which are often independent of the content or story plot. Many formal features are perceptually salient, such as high action levels, loud music or singing, and special effects. Often the most content-bearing and informative features are low in salience, such as character dialogue and absence of movement. The purpose of the study reported here was to investigate the effects of naturally occurring high and low salience formal features on recall of central and incidental television content.

Earlier studies of children's comprehension of television content support a curvilinear relation of age to the amount of incidental information recalled. Central recall increases with age in a linear fashion. Children in early elementary years remember more incidental than central information. With increasing age and television viewing sophistication, central and incidental information are remembered equally well, and by the fifth grade central recall is clearly better than incidental.

These age differences may be partly due to different cognitive skills needed to process central and incidental information. Incidental content is usually concrete and composed of discrete events. Central information, however, is thematic; it requires the ability to abstract, to make inferences about unseen events, feelings, and intentions, and to understand temporal relationships.

A second reason for age-related differences in recall patterns may be developmental change in what stimulus features control children's attention, Lorch,

Anderson, and Levin have suggested that children attend to what is comprehensible. According to Wright and Vlietstra's model of exploration to search, what are comprehensible and attention-worthy for younger and less experienced viewers are perceptually salient features -- things like high levels of action, loud music, singing, and special effects. With further development, habituation of attention to the sensory qualities of such features occurs as an accompaniment of media literacy. Control of the viewer's attention begins to shift from perceptually salient features to those features which relate to thematic relevance and informativeness.

Salient production features can be selectively used with informative material in such a way as to facilitate comprehension of central content among young viewers. Or salient features could draw attention to irrelevant information. Thus, it is our thesis that young children recall central content better when it is presented with highly salient features than when it is not. Older children, however, should recall equally well content presented only through non-salient, but informative, features like dialogue. Moreover, we propose that older children use the syntax of formal features as a structure around which to organize and integrate their comprehension of central content.

In the study reported here, then, we tested recall of central and incidental content when presented with salient or non-salient formal features for two age groups -- kindergarten and third to fourth grade.

Method

Participants. Subjects were 160 children at two age levels.

Procedure. Same-sex pairs of children were taken from their classrooms to

a mobile laboratory where they viewed an edited version of a cartoon, "Fat Albert and the Cosby Kids." The semi-naturalistic environment included a television set and toys for the children to play with if they so desired.

The stimulus tape, "The Tomboy," dealt with the reactions of a group of young boys to children who engage in nontraditional activities. The major plot involved the boys' feelings of surprise, anger, and denial that a girl was a better athlete than they were. The minor plot concerned the boys' censure of their leader, Fat Albert, because he liked to bake fudge. At several points during the program, the scene shifted to an adult narrator, Bill Cosby, who made humorous, theme-relevant comments about the plot. The conflict resolution occurred when the girl athlete helped Fat Albert play better tennis, resulting in a friendship based on a mutual understanding of feelings.

After viewing the cartoon, children were given an immediate recall test of 40 multiple-choice items. They then rejoined classroom activities for about 45 minutes followed by a return to the mobile laboratory for a delayed posttest of 20 new items. The immediate and delayed tests were on different item sets for each child. Specific item sets were rotated between immediate and delayed sessions.

Content items were cross-classified on two dimensions: 1) central or incidental plot information; and 2) high salience or low salience feature presentation. Central, or thematic, questions contained information judged to be essential in understanding the program plot, whereas incidental questions involved peripheral plot information. High feature salience was defined as high

action, loud music or singing, and special effects. In contrast, low feature salience was low action and character dialogue.

Figure 1 shows an example of an incidental high salience question: What did Fat Albert do here? a) Hid behind this Indian statue; or b) Walked into this store. This question is incidental to the program theme. It is classified as high salience because it occurred during loud music, high action, and was accompanied by both a visual and auditory special effect. Fat Albert, incidentally, is hiding behind the Indian statue.

Figure 2 is an incidental low salience question: When the gang told Fat Albert that he made some heavy fudge, what did they mean? a) It was too heavy to eat; or b) It was very good. Once again, the question is incidental to the program plot. However, this question is classified as low salience because it is presented through character dialogue and in low action format.

Next, in Figure 3 there is an example of a central high salience question: Why did Fat Albert sneak to school? a) He didn't want the gang to see the box he had; or b) He was playing hide and seek with the gang. This information is central because it is plot-relevant: specifically, children who engage in non-traditional activities, such as a boy making fudge for his teacher, are open to peer group censure and must be careful not to be seen. It is high salience because the scene was nonverbal, accentuated by loud music and high action.

Last, in Figure 4, there is a central low salience question: After tennis, Fat Albert likes Penny. Why? a) She let him beat her; b) She helped him play better. This question is central to the program theme. It concerns how Penny and Fat Albert came to understand each others' feelings and is the actual

conflict resolution of the plot. It is classified as low salience because it occurs during low action and in character dialogue.

Results

First, an obvious finding was a main effect for age -- older children answered more questions correctly than younger children.

More importantly, there was an age and centrality interaction, as seen in Figure 5. Older children were more selective in recall of central over incidental information than were younger children.

A three-way interaction of age, centrality, and delay was significant, and is presented in Figure 6. Remember that children received both an immediate and a delayed recall test. Older children retained the central information over time but lost a little of the incidental information. Younger children, however, lost central information over time, and actually increased in recall of incidental information. Another way of stating this finding is that age differences in central-incidental recall were almost entirely restricted to the delayed recall data.

The most interesting finding was an interaction of centrality with formal feature salience, as seen in Figure 7. Though there was no interaction with age, the results are more clear if separated graphically by age groups. Note that the pattern of percentage-correct scores is comparable across age groups. The results indicate that central content, associated with high feature salience, was better recalled at both age levels than was central content associated with low feature salience. High feature salience improved recall of central, but not incidental information. This result suggests that central inforamtion is

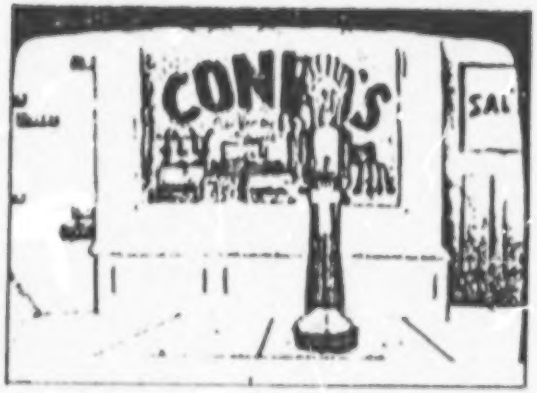
processed more thoroughly when conveyed through a high salience presentation, particularly for the younger children.

Discussion

The finding that younger children remembered more incidental than central information, the reverse pattern being true of older children, is well documented in the literature. What is new in this study is that these differences emerged in the delayed rather than in the immediate recall tests.

This finding suggests that the age differences resulted from differential rehearsal of material during the interval between the immediate and delayed recall tests. The search skills of nine- and ten-year-old children facilitated selective recall of abstract, thematic material. In contrast, the kindergarten children appear to have rehearsed little, isolated bits of incidental information while losing most central information which required extensive processing.

Processing abstract, central content may be more difficult when it is presented through dialogue, a low salience feature, than when it is presented through a salient feature like action. Younger children had difficulty recalling central inforamtion in a low salience format, but the effect of a highly salient presentation was to help them remember the central information as well as the incidental information. Moreover, older children still used these salient features to help encode and store central information. Potentially, producers of children's television programs could selectively use perceptually salient production features to improve young children's understanding of central, thematic content.



7. What did Pat Albert do here?

A

(A) Hid behind this Indian statue.

B

(B) Walked into this store.

INCIDENTAL-HIGH SALIENCE

FIGURE 1.

20. When the gang told Pat Albert he made some heavy fudge, what did they mean?

A

(A) It was too heavy to eat.

B

(B) It was very good.

INCIDENTAL-LOW SALIENCE

FIGURE 2.

14. Why did Pat Albert sneak to school?

A

(A) He didn't want the gang to see the box he had.

B

(B) He was playing hide and seek with the gang.

CENTRAL-HIGH SALIENCE

FIGURE 3.

16. After tennis, Pat Albert liked Penny. Why?

A

(A) She let him beat her.

B

(B) She helped him play better.

CENTRAL-LOW SALIENCE

FIGURE 4.

MEAN PERCENT CORRECT AS A FUNCTION OF CENTRALITY AND AGE

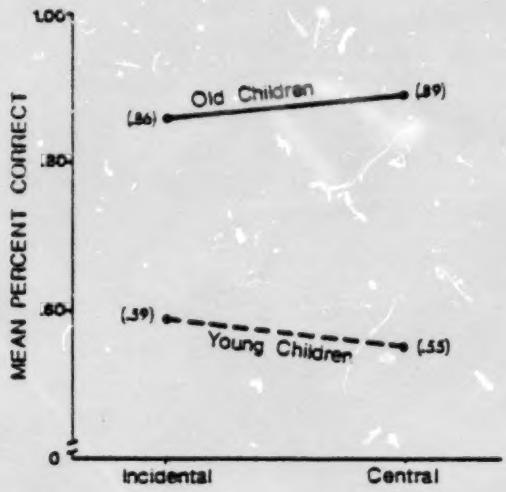


FIGURE 5.

MEAN PERCENT CORRECT AS A FUNCTION OF CENTRALITY AND DELAY AND AGE

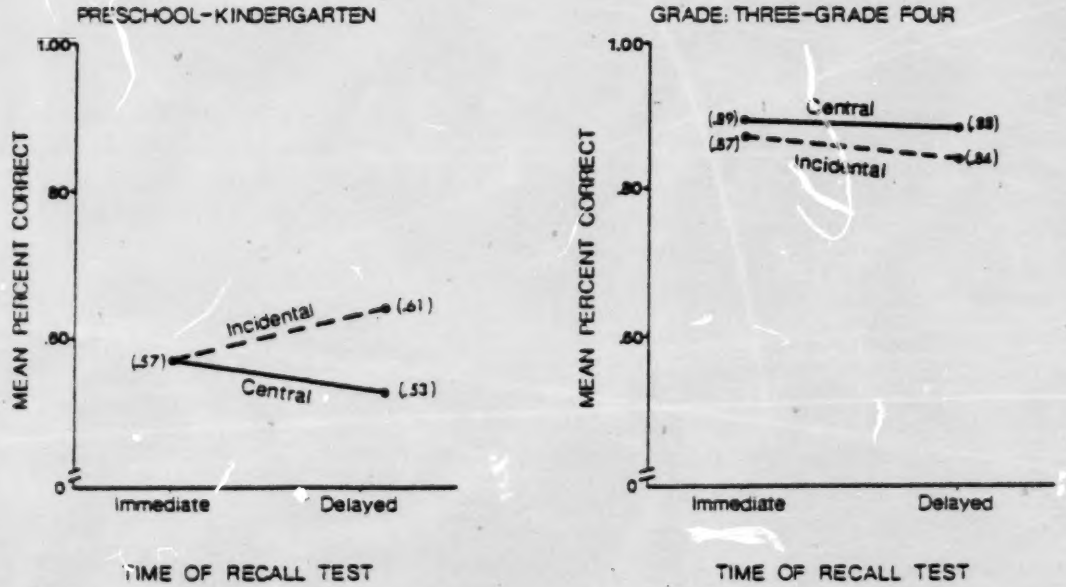


FIGURE 6.

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MEAN PERCENT CORRECT AS A FUNCTION OF CENTRALITY AND FEATURE SALIENCE

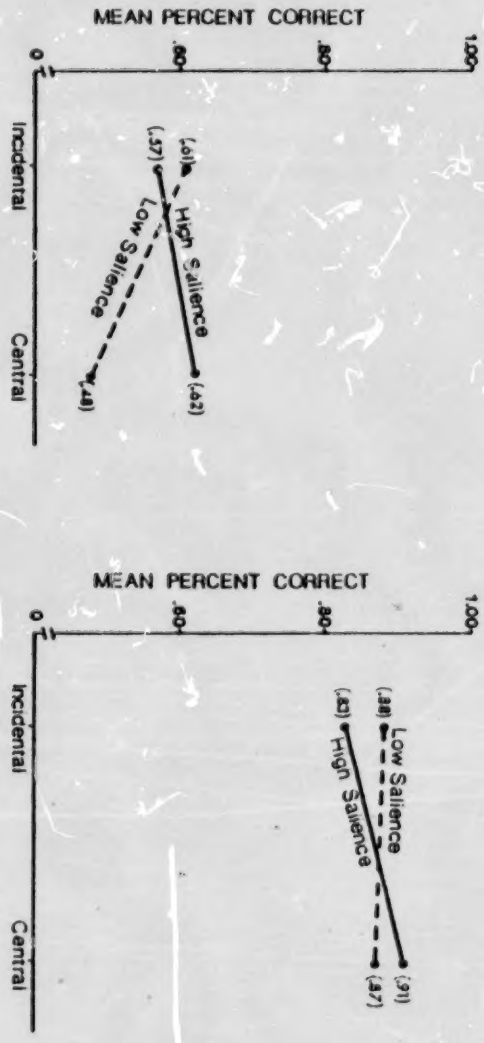

FIGURE 7.